



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,835	07/23/2001	Hiroyuki Tanaka	N36-134375M/TH	2206

30743 7590 07/25/2003

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.  
11491 SUNSET HILLS ROAD  
SUITE 340  
RESTON, VA 20190

EXAMINER

VALENCIA, DANIEL E

ART UNIT PAPER NUMBER

2874

DATE MAILED: 07/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/909,835

Applicant(s)

TANAKA ET AL.

Examiner

Daniel E Valencia

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Amendment 'D' filed July 14, 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 15 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7,9-11 and 14 is/are rejected.
- 7) ☒ Claim(s) 5,8 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's communication filed on July 14, 2003 has been carefully studied by the Examiner. Some of the arguments advanced therein are persuasive and the rejections based upon prior art references of Cook, Benzoni, and Meadowcroft made of record in the previous Office Action are withdrawn. Some of applicant's claims are now allowable.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 6, 7, 9, 10, 11, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi U.S. Patent No. 5,631,992 (~~newly cited~~). Refer to the appropriate drawings or parts of the specification. Takahashi discloses an optical fiber LED assembly with all the limitations of the abovementioned claims. Regarding claim 1, Takahashi discloses an optical module (figure 1) comprising: an optical semiconductor element (2) sealed with a cap (3) having an upper surface formed with a window (not labeled); at least one optical part (9) confronted with the window; a housing (10) holding the optical part therein and having an opened end face (toward the cap side) wherein an

Art Unit: 2874

outer dimension of the opened end face of the housing is equal to or smaller than an outer dimension of the upper surface of the cap; and a connecting layer (18) directly connecting the upper surface of the cap to the opened end face of the housing.

Takahashi's disclosure shows that the semiconductor element has a stem portion (6) opposite from the upper surface of the cap, and the outer dimension of the opened end face of the housing is equal to or smaller than an outer dimension of the stem portion, wherein the stem portion is distanced from the opened end face, as explained in instant claims 3 and 4. As to claim 6, Takahashi discloses that the housing has a receptacle part adapted to receive a mating optical plug (11). Takahashi's disclosure also shows that the module has a casing (8), which at least partly covers the cap and the housing; and which extend across the connecting layer as explained in claim 7. With reference to claim 9, Takahashi discloses an optical module in which an optical semiconductor element (2) of the cap sealing (3) type is mounted on (10) a housing to be aligned with an optical axis of at least one optical part (9) contained in the housing, wherein: an upper surface of the cap (not labeled) of said optical semiconductor element is bonded to an end face of said housing (by 18). Regarding claim 10, Cook discloses an optical module in which an optical semiconductor element (2) of the cap sealing type (3) is mounted on a housing (9) to be aligned with an optical axis of a lens (9) contained on the housing adapted to fittingly receive and hold a ferrule (11) of an optical plug of an mating connecting member, wherein: an upper surface of a cap of said optical semiconductor element is bonded to an end face of said housing. Takahashi further

discloses that a side surface of the cap is partly covered with a casing (8) and a clearance therebetween is sealed with resin (19), as mentioned in claims 11 and 14.

Applicant argues that Takahashi reference does not teach a housing "directly connected" to the cap, because the housing is connected to the cap through a seal ring made of synthetic rubber. However, Applicant's claim only calls for a "connecting layer directly connecting the surface of the cap to the open end face of the housing."

Interpreting the claim language in light of the specification, the rubber layer in Takahashi "directly connects" the cap and the housing in the same way that the adhesive layer does in the present invention. Both are layers disposed directly between the cap and the housing; therefore, the rubber layer of Takahashi "directly connects" the cap to the housing. If the reference showed another layer (in addition to the rubber) disposed between the cap and the housing, the rubber would not "directly connect" the two.

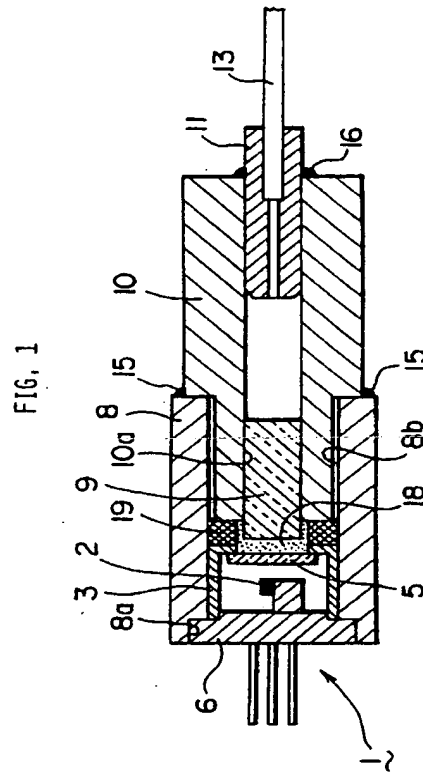
Applicant further asserts that the Takahashi reference does not show "the outer diameter of the housing is equal to or smaller than the diameter of the cap". Rather, the claim simply requires a "housing...having an opened end face wherein an outer dimension of the opened end face of the housing is equal to or smaller than the outer dimension of the upper surface of the cap...". Referring to the figure below, one can clearly see that the opened end face of the housing (not labeled, but holding the rod lens 9 therein) has a smaller outer dimension than the upper surface (not labeled) of the cap (3).

U.S. Patent

May 20, 1997

Sheet 1 of 2

5,631,992



Regarding the alleged differences between the invention and the Takahashi reference mentioned on page 5 of the response, although they may be differences between the Takahashi reference and the present invention as described in the specification, they are not limitations included in the rejected claims.

***Allowable Subject Matter***

Claims 5, 8, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: As to dependent claims 5 and 12, the prior art alone or in combination fails to disclose or render obvious the optical module according to claims 1 and 11, respectively, wherein the connecting layer is formed by an adhesive curable by irradiation of ultraviolet rays. For example, although ultraviolet curable adhesives are well known in the art for some applications, Takahashi does not teach or suggest the use of this type of adhesive. In fact, Takahashi teaches away from this limitation by disclosing the rubber seal as the connecting layer.

As to dependent claim 8, the prior art alone or in combination fails to disclose or render obvious the optical module according to claim 7, further comprising a sealing layer filled in a clearance between the casing and the connecting layer being formed by resin cured thermally. For example, Takahashi discloses a casing which partially covers the cap and the housing; and which extends across the connecting layer; however, the reference does not disclose or even suggest the use of thermally cured adhesive for filling the clearance between the casing and the connecting layer.

Claim 13 and 15 are allowed.

As to independent claim 13, the prior art alone or in combination fails to disclose or render obvious an optical module unit, comprising: a plurality of optical modules arrayed in juxtaposition and covered with a single common casing, each of said optical modules in said plurality including an optical semiconductor element of a cap sealing type mounted in a housing, wherein an upper surface of a cap of said optical semiconductor element is bonded to an end face of said housing; and a resin sealing a clearance between each of said molecules. For example, Benzoni fails to teach (1) the common casing. Rather, fig. 13 of Benzoni shows multiple pieces to the casing.

Similarly, independent claim 15 requires this "common casing" and is allowable for the same reason that claim 13 is allowable.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

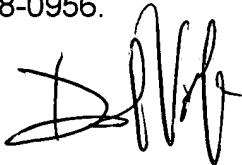


Applicant's arguments with regards to the application of Takahashi under §102(b) filed July 14, 2003 have been fully considered but they are not persuasive. Each of the arguments has been fully addressed in the above rejection.

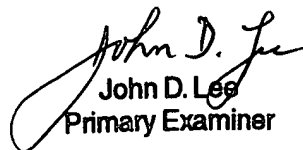
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E Valencia whose telephone number is (703)-305-4399. The examiner can normally be reached on Monday-Friday 9:30-6:00.

The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-7724 for regular communications and (703)-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.



DEV  
July 23, 2003



John D. Lee  
Primary Examiner